STATE ROUTE

District 6

Transportation Concept Report

Office of System Planning December 2006

DRAFT

Approval Recommended:

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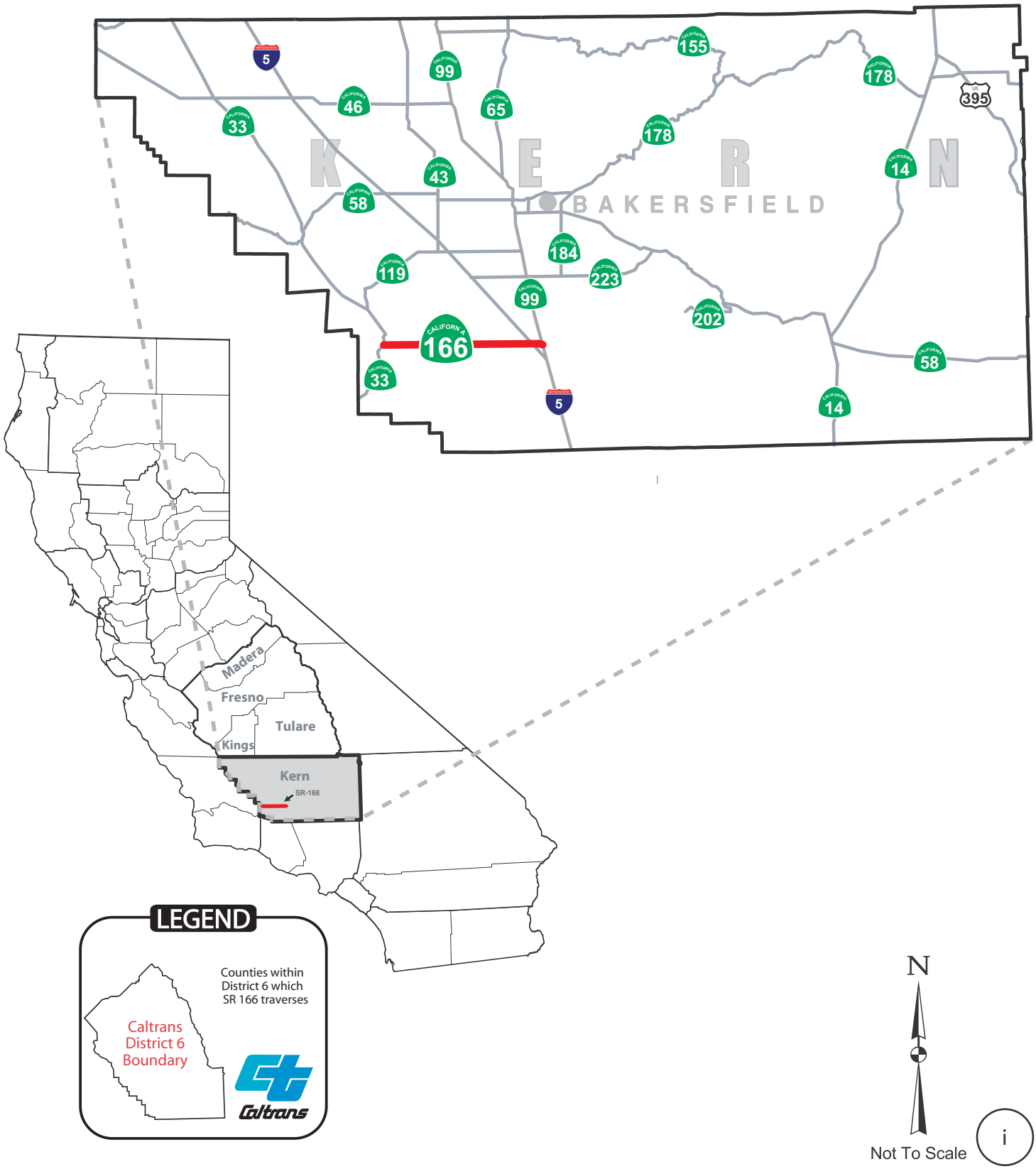
DRAFT

STATE ROUTE

TRANSPORTATION CONCEPT REPORT

CALIFORNIA 166

LOCATION MAP



Transportation Concept Report
State Route 166
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I. INTRODUCTION

The Transportation Concept Report (TCR) is a long-range system-planning document that establishes a planning concept for the corridor through the year 2030. The TCR provides route data and information, as well as current and projected (years 2005, 2015, and 2030 respectively) operating characteristics.

Considering reasonable financial and physical constraints, the TCR defines the appropriate Concept Level of Service (Concept LOS) and facility type(s) for each route. It also broadly identifies the nature and extent of improvements needed to attain the Concept LOS. Capacity-enhancing improvements, such as lane additions, are the primary focus for LOS attainment.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, or whichever LOS is feasible to attain. For the purpose of this document, however, the Concept LOS is a "target" LOS determined by the importance of the route and environmental factors. A deficiency (need for improvement) is triggered when the actual LOS falls below the Concept LOS.

The TCR also identifies transit, and the deployment of Intelligent Transportation Systems (ITS) as integral to route corridor development.

However, operational improvements, such as intersection modifications, are discussed as interim measures. The TCR also identifies transit, notably the High Speed Passenger Rail System, and the deployment of Intelligent Transportation Systems (ITS) as integral to route corridor development. The Ultimate Transportation Corridor (UTC), as identified in this TCR, ensures that adequate right-of-way (ROW) is preserved for ultimate facility projects beyond 2030.

However, the UTC does not consider funding as a constraint. Caltrans District 6 System Planning staff should be consulted for the interim ROW (prior to ultimate construction) for a specific location along the corridor.

This document identifies the initial and conceptual planning phase that leads to subsequent programming and the project development process. Consequently, the specific nature of proposed improvements such as roadway width, number of lanes, and access control might change in later project development stages. Final determinations are normally made during the project report and design phases.

Therefore, a TCR is a "living document," subject to amendments as conditions change and projects are completed. System Planning staff will update the TCR on a three-to-five year cycle or as needed. The TCR for State Route (SR) 166 was prepared and completed by District 6 Office of System Planning staff in cooperation with local and regional agencies and other Caltrans functional units. As such, this TCR will serve as a guide in cooperative planning and implementation of transportation and land use decisions.

II. ROUTE DESCRIPTION AND PURPOSE

Begins: At Route 1 in Santa Barbara County
Ends: At Route 99 in Kern County

Length: 96-mile highway located in Santa Barbara, San Luis Obispo, and Kern County

The route is located in Caltrans' Districts 5 and 6, which include Santa Barbara, San Luis Obispo and Kern Counties. This Transportation Concept Report covers the 24 miles of SR 166, from SR 33 in City of Maricopa to SR 99 in Kern County. The portion of Route 166 west of the SR 166/33 junction is not covered in this TCR. Part of the route jointly shared by Route 33 and 166 will be discussed in the Route 33 TCR. At the beginning of the document is a map (Location Map, page "i") that shows the portion of Route 166 covered by this TCR.

Land Use: The east-west route is in a predominantly rural area. Land use is primarily agriculture. Oil based pipeline companies are located along the route. A small residential development exists along the route in Maricopa City. The route primarily serves local commuters, truck and recreational traffic to the California Coast and the Cerro Noreste/Mt. Pinos recreation area.

Terrain: The terrain is flat along the route. Route 166 is on an east-west alignment located northwest of the "Grapevine" with its mountainous terrain.

A. Modal Alternatives

Transit Services: No local or regional transit services are provided along any portion of this route. The City of Taft, located approximately 10 miles north of Maricopa, provides transit service and connections to other destinations in Kern County.

Commercial transit carriers serving Kern County include Greyhound Bus Lines, Orange Belt Stagelines, the Airport Bus of Bakersfield, and the Amtrak bus. Golden Empire Transit is the local transit carrier within Bakersfield. However, none of these carriers use this highway as a portion of their normal routes.

Amtrak Rail: Currently, there are six Amtrak San Joaquin passenger rail trains that pass through Kern County on a daily basis but none of these cross or directly affect this Route. The San Joaquin Route Amtrak train has station connections in Bakersfield, Wasco, Corcoran, Hanford, Fresno, and Madera. Amtrak Thruway bus service is available in Bakersfield for passengers wishing to continue traveling to other destinations. In the past, at approximately PM 02.70 (near Pentland Rd.), tracks of the San Joaquin Valley Railroad once came within approximately one-half mile of this route but did not cross it. The right of way, if it is still available, could be considered in the future for alternative transportation modes or recreational facilities such as a regional bike trail.

High Speed Rail: The California High Speed Rail Authority has developed the California High Speed Rail Business Plan to build a high-speed rail line generally parallel to and west of Route 99, from Los Angeles to San Francisco. The plan describes a 700-mile long high-speed train system capable of speeds of 200 miles per hour.

The system would serve the major metropolitan centers of California. In 2020, it is projected to carry 32 million inter-city passengers annually, transport another 10 million commuters, and would generate nearly $900 million in revenue.

Bicycle Routes & Access: From its Kern County beginning at Route 33 (in the community of Maricopa) to Sabodan St. (PM 0.00 to PM 24.10) Route 166 is comprised of a 2-lane conventional roadway and from Sabodan St. to the Route's terminus at SR 99 (PM 24.10 to 24.60) Route 166 is comprised of 4-lane conventional highway. All segments are opened to bicycle travel. However, with the exception of a two block portion within the community of Maricopa, and at the bridges crossing the California Aqueduct and Interstate 5, no rideable shoulders are currently provided along this route.

Please refer to the "Bicycle Routes/Facilities" section of the Appendix for more detailed information on bicycle facilities along Route 166.

Pedestrian Facilities & Access: Pedestrian and ADA concerns for this route are to be found solely within the community of Maricopa where there are currently moderate concentrations of residential, retail and commercial properties on or adjacent to our right-of- way. The remainder of this route is very rural with few, if any, current pedestrian or ADA concerns. However, any future projects constructed along this route's right-of-way could change this status and require the installation of appropriate facilities such as crosswalks, sidewalks, curb cuts, ramps, railings etc.

Please refer to the "Pedestrian Facilities & Access" section of the Appendix for more detailed information on pedestrian and ADA concerns along Route 166.

B. Intelligent Transportation Systems (ITS)

With the exception of Kern County's emergency call boxes already in place there are no applications of Intelligent Transportation Systems in existence on State Route 166. Operational and safety efficiency may be enhanced in the future by the deployment of additional Intelligent Transportation System technology near the Route 166/33 junction.

If warranted, the Caltrans Central Valley Transportation Management Center (TMC) is capable of monitoring specific traffic locations from its headquarters at the District Office in Fresno, if traffic conditions warrant monitoring.

Please refer to the "ITS" section of the Appendix for more detailed information on current and future ITS applications along Route 166.

C. Highway Facts

- Route 166 was added to the State Highway System in 1919 as State Legislative Route 57 and then renumbered in 1964 (along with all California highways) as Route 166.
- The portion of Route 166 from Route 101 in San Luis Obispo County, to Interstate 5 in Kern County, was added to the California Freeway and Expressway System in 1959.
- The Kern Council of Governments' Regional Transportation Plan recognizes Route 166 as a regionally significant route.

- Route 166 is important as a route providing commuters with access to the coast. Travelers use the route mainly on weekends and holidays. The Annual Average Daily Traffic (AADT) ranges from 2,800 to 5,200, with trucks constituting up to 35 percent of the AADT.

- In District 6, Route 166 is functionally classified as a Minor Arterial within Kern County.

- Route 166 from Route 33 to Route 99 is known as "Maricopa Highway".

- Route 166 serves as a significant route for truck traffic in Kern County. This route is designated as a State Highway Terminal Access Route for larger trucks under the STAA from the Route 33 junction to Route 99.

D. General Environmental Considerations

Specific sensitive biological species in Kern County include, but are not limited to, the following flora and fauna:

FLORA-wetland areas, Bakersfield cactus, California Jewel Flower, Kern Mallow, Alkali Mariposa lily plants, San Joaquin Woolythreads; FAUNA-San Joaquin kit fox, giant kangaroo rat, Tipton kangaroo rat, blunt-nosed leopard lizard, burrowing owl, Kern Canyon salamander, and migratory birds.

Environmental considerations may be presented by the oil-based industries situated along this route. Historically, oil production has prospered as a major industry in and around the City of Maricopa. Highway improvements on the route will need to take into consideration the agricultural landscape, the aquatic resources from California Aqueduct that run under Route 166, flooding, and the Fages-Zalvidea Historical Marker which is located adjacent to this Route at PM 19.00.

III. Segment Map

On the following page is an 11"x17" foldout TCR Segment Map for Route 166. This map shows the 4 segments of SR 166 in Kern County.

Following the Segment Map is Section IV, which provides an overview of Route 166 geometrics (including segment detail maps), land use and environmental considerations. The overview is split into three segment groups - Land Use, Facility and Historical/Environmental.

See the following page for this TCR's 11" X 17" Segment Map.

Please replace this blank page with the Segment Map
which is printed separately.

IV. Geometrics, Land Use, and Environmental Considerations

Segments 1: Route 33 to Pentland Road

Begins: At Route 33 JCT
Ends: At Pentland Road

Land Use: The City of Maricopa includes residential and sparse commercial development. Agriculture land lies to the east of the City along Route 166. This portion of the route has a combined rural-urban land use.

Facility: Route 166 begins with a short 4-lane conventional section just east of Route 33 and then converts to a 2-lane conventional highway from the eastern boundary of Maricopa to Pentland Road.

Interchanges and other intersections with State highways:

- Route 166 intersects with Route 33.

Environmental/Historical Resources: Environmental concerns would range from the impacts of ROW acquisition and noise, in the urban areas. Route 166 is effected by heavy truck traffic in the urban area. Context sensitive solutions may be considered in all improvements to the route.

Segments 2-4: Pentland Road to Route 99

Begins: At Pentland Road
Ends: At Route 99

Land Use: Segments 2-4 begins and ends with agricultural land use. A small commercial development is located near Route 99. Oil based companies are located along the route. The picturesque Temblor Range Mountains are located to the south and west of Route 166.

Facility: The highway is primarily a 2-lane conventional highway from Pentland Road and ends with a short 4-lane conventional highway near the Route 99 interchange.

Interchanges and other intersections with State highways

- Route 166 Interchange connection is at Interstate 5.
- Route 166 Interchange connection is at Route 99.

Environmental/Historical Resources: in Kern County the primary environmental issue is endangered species, primarily the kit fox.

Issues on the route include agricultural land, oil industry sites, flooding on the route, and sensitive resources near the California Aqueduct. Throughout the year, the movement of large agricultural implements (i.e. tractors, combines, mechanical picking equipment, etc.) is a common occurrence within these segments. Such movement of equipment occasionally hinders the safe free-flow of traffic along this route.

Right-of-Way (ROW) acquisitions and preservation are important route issues for widening improvements in the future. ROW acquisition cost may be exorbitant in the future.

V. Concept Rationale

Route Concept LOS:

Rural: LOS C is assigned to the rural portions of Route 166. The rural portion of this route has a high percentage of truck traffic mixed with intra-regional commuter traffic.

Urban/Rural: LOS C was assigned to the urban/rural area due to commuter traffic and through truck trips.

Concept Facility: The Concept Facility for SR 166 is the same as the existing facility. In Segments 1-3 the existing facility is a 2-lane conventional highway. In Segments 1-3 the Concept Facility for those segments are for a 2-lane conventional highway with operational improvements. The existing facility for Segment 4 is a 2-lane/4-lane conventional highway; the Concept Facility is the same facility with operational improvements.

The Ultimate Transportation Corridor (UTC-beyond 2030) for all segments on the route (Segments 1-4) is for a 4-lane Conventional highway.

VI. State Route 166 Transportation Concept Report Summary Chart

The 2-page Summary Chart following this section indicates that SR 166 is divided into 4 distinct segments that provide descriptive and technical information, both current and forecast, for the State highway. It also has a linear geographic diagram that illustrates the major State and local highway facilities, along with key natural features and City/County boundaries, current highway geometrics, i.e., conventional highway, expressway, and freeway. A "Chart Explanation" bar defines what is shown on the Chart with the exception of self-explanatory technical information. The Summary Chart also delineates functional classification, various highway designations, environmental information, and General Plan information.

See the following 2 pages for this TCR's Summary Charts.

Transportation Concept Report

State Route 166

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SUMMARY CHART 1-A

LEGEND

Existing Lane Types

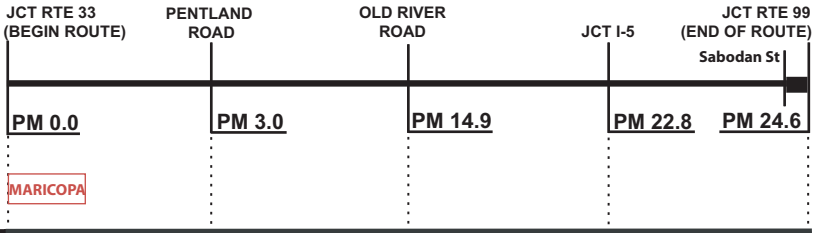
Conventional

Number of Lanes: 2, 4, 6

Planned or Programmed by 2030

None Planned or Programmed

* Length of Segments on this bar chart are Not To Scale



Segment: Is self-explanatory:

Rural/Urban: Indicates whether the segment is in a rural area or city limits.

Terrain: Shows the general highway grade: minimal grade = level; moderate grade = rolling; and severe grade = mountainous.

ROW: Portrays Right-of-Way (ROW) and geometric data in feet.

Shoulder Range: Is a range of treated surface (8' standard), both inside and outside shoulders.

Ultimate (UTC): Is the typical ROW needed for the ultimate facility, i.e., 8 lane freeway (8F) 218' is the standard typical UTC ROW - will be updated upon corridor plan lining by specific sections of highway.

Facility: Shows the Existing Facility, the desired facility type (2030 Concept) by 2030-RTPA's and Caltrans, and the Ultimate Facility to preserve ROW and plan line beyond 2030. It also shows whether a passing lane exists. 2C(I) indicates that the highway has been improved in select locations with operational or safety improvements. Examples are: passing lanes, channelization and traffic signals.

LOS: The current (2006) LOS (level of service), along with the expected calculated LOS in 2015 and 2030. The 2030 Concept is the target LOS desired, i.e., LOS C, for attainment by 2030 Caltrans.

Deficiency: Occurs when the target LOS is degraded, i.e., LOS D worse than LOS C, with the year of occurrence shown. It also shows whether a capacity improving project is in the STIP, and what the LOS would be with the 2030 Concept improvement.

Directional Split: Denotes the split in peak hour traffic flow on a directional basis (NB/SB or WB/EB) either in the morning (AM) or evening (PM).

AADT: Signifies Annual Average Daily Traffic.

Peak Hour: Indicates a representation of the maximum hour of traffic flow during the day.

% Trucks: Shows the percent of trucks for AADT and Peak Hour.

(I)++: 2-lane conventional highway with improvements i.e. turn lanes, passing lanes, bike lanes, signals etc.

+: The Ultimate ROW is the same as the Existing ROW.

NA: Not deficient - Concept Facility meets Concept LOS.

SEGMENT #	1	2	3	4
County / Route	KER 166	KER 166	KER 166	KER 166
Description Begin	JCT RTE 33	PENTLAND ROAD	OLD RIVER ROAD	JCT I-5
Description End	PENTLAND ROAD	OLD RIVER ROAD	JCT I-5	JCT RTE 99
Postmile Limits Begin/End	0.0 / 3.0	3.0 / 14.9	14.9 / 22.8	22.8 / 24.6
Length (MI)	3.0	11.9	7.9	1.8
Rural or Urban	URBAN/RURAL	RURAL	RURAL	RURAL
Terrain	FLAT	FLAT	FLAT	FLAT
ROW: Range Existing (FT)	60 / 100	100 / 100	100 / 100	100 / 140
Median Range (FT)	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0	0.0 / 22.0
Shoulder Range (FT)	0.0 / 8.0	0.0 / 3.0	0.0 / 8.0	8.0 / 8.0
Lane Width (FT)	11.0	11.0	12.0	12.0
Ultimate ROW (FT)	110 / 146	146	146	146
Facility: Existing	2C	2C	2C	2C/4C
2030 Concept	2C(I)++	2C(I)++	2C(I)++	2C/4C(I)++
UTC	4C	4C	4C	4C
LOS: 2006	B	B	B	B
LOS: 2015	C	C	B	B
LOS: 2030	C	C	B	B
LOS: 2030 Concept	C	C	C	C
Deficiency/Year Deficient	N/A	N/A	N/A	N/A
Project in STIP/RTP (Y/N)	NO	NO	NO	NO
LOS W/ Concept Improvement	N/A	N/A	N/A	N/A
Directional Split (Peak Hour)	52 / 48	65 / 35	55 / 45	60 / 40
AADT: 2006	3,900	5,200	2,800	3,300
AADT: 2015	4,900	7,300	4,200	4,100
AADT: 2030	6,200	10,100	6,200	4,900
Peak Hour: 2006	350	470	200	300
Peak Hour: 2015	440	660	300	370
Peak Hour: 2030	560	910	450	450
% Trucks: AADT	28%	27%	35%	31%
% Trucks: Peak Hour	25%	25%	28%	26%

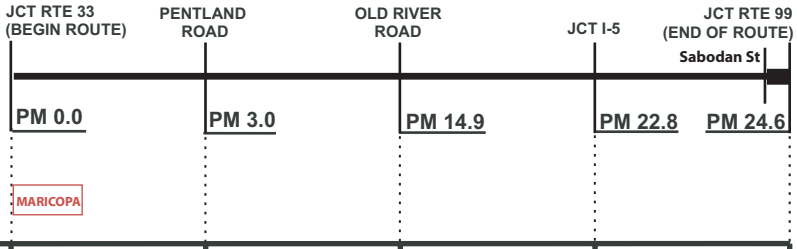
LEGEND

Existing Lane Types
Conventional

Planned or Programmed by 2030
None Planned or Programmed

Number of Lanes
2
4
6

* Length of Segments on this bar chart are Not To Scale



Segment: Is self-explanatory:

Functional Classification: A process by which streets and highways are grouped into or classification systems.

NHS (National Highway System): Included in the NHS is all interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

Freeway/Expressway System: The Statewide system of highways declared to be essential to the future development of California.

Regionally Significant: Serves regional transportation needs including at a minimum all principal arterial highways and all fixed guideway transit facilities.

STRAHNET: A highway that provides defense access, continuity, and emergency capabilities for movements of personnel and equipment in both peace and war.

Lifeline: A route on the State highway system that is deemed so critical to emergency response/life-saving activities of a region or the state that it must remain open.

IRRS (Interregional Road System): A series of State highway routes, outside the urbanized areas, that provide access to the State's economic centers, major recreational areas, and urban and rural regions.

STAA (Surface Transportation Assistance Act): This act required states to allow larger trucks on the National Network. "Terminal Access" routes are State highways that can accomodate STAA trucks. Other designations i.e., California Legal offer more limited access.

Scenic: A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers.

ICES (Intermodal Corridor of Economic Significance): Significant National Highway System Corridors that link intermodal facilities most directly, conveniently and efficiently to intrastate, interstate, and international markets.

SEGMENT	1	2	3	4
County / Route	KER 166	KER 166	KER 166	KER 166
Description Begin	JCT RTE 33	PENTLAND ROAD	OLD RIVER ROAD	JCT I-5
Description End	PENTLAND ROAD	OLD RIVER ROAD	JCT I-5	JCT RTE 99
Postmile Limits Begin/End	0.0 / 3.0	3.0 / 14.9	14.9 / 22.8	22.8 / 24.6
Lane Length (MI)	3.0	11.9	7.9	1.8
Functional Classification	MINOR ARTERIAL	MINOR ARTERIAL	MINOR ARTERIAL	MINOR ARTERIAL
National Highway System (NHS) (Y/N)	NO	NO	NO	NO
Freeway/Expressway System (Y/N)	YES	YES	YES	YES
Regionally Significant (Y/N)	YES	YES	YES	YES
STRAHNET (Y/N)	NO	NO	NO	NO
Lifeline (Y/N)	NO	NO	NO	NO
IRRS (Yes: HE=High Emphasis, F=Focus, G=Gateway) or No	NO	NO	NO	NO
TRUCK NETWORK: STAA (NN=National Network, TA=Terminal Access) or CL=California Legal, R=Special Restrictions; A=Advisory	TA	TA	TA	TA
Scenic (Yes: OD=Officially Designated, E=Eligible) or No	NO	NO	NO	NO
ICES (Intermodal Corridor of Economic Significance) (Y/N)	NO	NO	NO	NO
General Plan/RTP LOS Standard	Kern Co LOS D for CMP & RTP Regionally Significant System	Kern Co LOS D for CMP & RTP Regionally Significant System	Kern Co LOS D for CMP & RTP Regionally Significant System	Kern Co LOS D for CMP & RTP Regionally Significant System
General Plan/RTP Standard Highway Classification	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY	EXPRESSWAY
Bikes/Pedestrians Allowed (Y/N) (Y* = Bike Route/Lane in Roadway)	YES	YES	YES	YES

VII. A Review of Route 166 Performance: Current and Future

As of the year 2006, Route 166 is operating at a range of LOS B for the entire 24.6 miles this TCR addresses. Segments 1 and 2 will deteriorate from a LOS B to LOS C by 2030. Segments 3 and 4 will remain at a LOS B by 2030.

Maintenance and operation improvements on the route are important to retention of an adequate LOS. Projected population increases in the State of California will ultimately impact the route in various ways, such as a decrease in the LOS on the route.

Truck traffic AADT averages 30% of all traffic on the route. Trucks journey to and from the coastal region in California on the route to other destinations. Heavy truck traffic treks through the city of Maricopa, therefore, freight issues such as operational improvements may need to be addressed.

Routes 166 and 33 converge at a "T" intersection in the community of Maricopa. Improvements to the Route 166/33 junction have been made in the past. However, adequate ROW may need to be reserved at the Route 166/33 Junction in order to accommodate and mitigate future improvements necessitated by congestion.

Throughout the year, the movement of large agricultural implements (i.e. tractors, combines, mechanical picking equipment, etc.) is a common occurrence within Segments 2-4. Such movement of equipment occasionally hinders the safe free-flow of traffic along this route.

The UTC for Route 166 is for a 4-lane conventional highway from the existing 2-lane conventional highway for all segments. However, at this time there are no projects being planned to convert this route to a 4-lane conventional highway.

Bakersfield Metro projects in Kern County, include a future West Beltway north/south route from near Route 99 to I-5. A South Beltway east-west route is proposed from Route 58 east to I-5. The South Beltway alignment will be north of Route 166. Newly proposed West and South Beltway routes may impact future circulation in the southwest quadrant of Kern County.

In addition to the regular maintenance, operations and safety improvements completed on Route 166 (State Highway Operations Protection Program or SHOPP projects). Caltrans will continue to work on implementation of any needed ITS improvements, such as changeable message signs, and other strategies to more effectively sustain and improve traffic flow.

Acquiring funding sources for Route 166 improvements will be a continuing challenge for all agencies. The Kern Council of Governments (Kern COG is the Metropolitan Planning Organization or MPO), the City of Maricopa and the County need to determine how Route 166 should develop with available regional funding.

The Livable Communities and Context Sensitive Solutions concepts may be considered and possibly implemented in future design and construction of improvements to the Route 166, particularly in the urban area. The use of these two concepts act to scale down the magnitude of its impact as well as increase the aesthetics of the system. Also, environmental justice should be considered in future development on Route 166. The environmental justice process will act to not overwhelm poor and minority communities in transportation planning.

In any case, Caltrans will need to continue emphasizing the further rehabilitation, operational, and capacity improvements of Route 166 due to its regional importance and heavy truck traffic.

VIII. Planned and Programmed Improvements for Route 166

The following table show both the planned and programmed projects for Route 166 over the next 25 years. The planned projects include *candidate* projects for the STIP or RTP projects. The programmed projects include *actual* projects in the STIP. STIP projects are primarily capacity-increasing.

The table shows:

1. The specific segment.
2. Route 166 Planned Projects - the listing document (RTP, ITSP, STIP Candidate, or SHOPP Candidate), description of the project, and known pertinent data.
3. Route 166 Programmed Projects - the listing document (STIP, SHOPP), description of the project, and projected begin and completed construction dates.

Project scope and technical data are for general informational purposes only. If current information is needed, please verify with the Caltrans District 6 Office of Advance Planning at (559) 488-4162		
Segment PM/KP From/To	**SR 166 Planned Projects**	**SR 166 Programmed Projects**
1-4 KERN PM 0.0/24.6 RTE 33 to RTE 99	There are no projects currently planned for this segment.	There are no projects currently programmed for this segment.

Please see the Appendix for this TCR's References, Glossary and additional information concerning Intelligent Transportation Systems (ITS), Transit Facilities, Bicycle Facilities and Pedestrian Facilities.